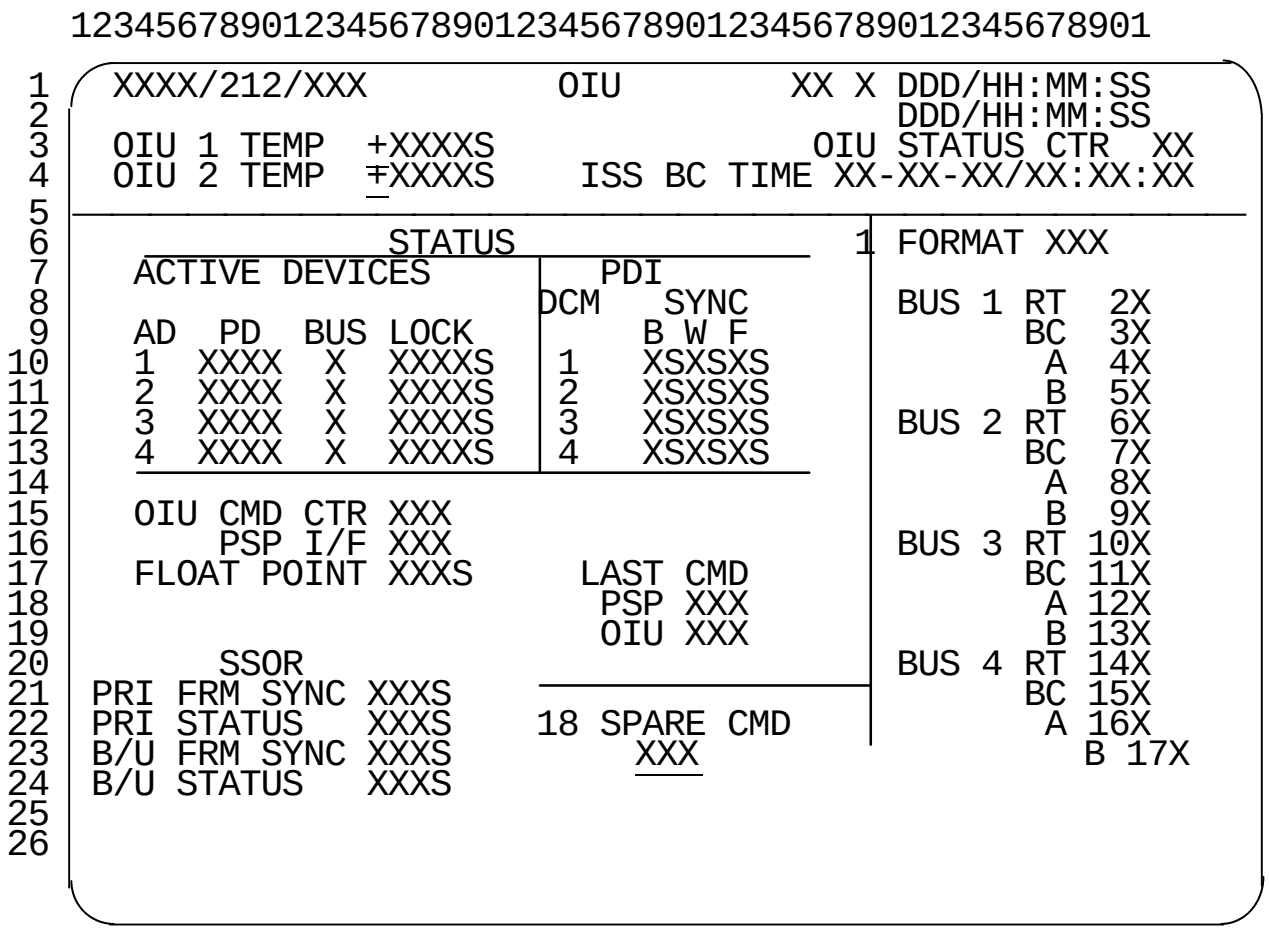
**SPEC 212 OIU DISPLAY**



PARAMETER CHARACTERISTICS: SM 212 OIU DISPLAY

| CRT NAME | MSID | UNITS | DISPLAY RANGE | STATUS INDICATORS | | | | | FDA (Limits) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H | L | M | ↑ | ↓ | HI | LO |
| OIU 1 TEMP [1] | P50T4000V | °F | -23.4 to +304.3 | | | M | ↑ | | 212 | --------- |
| OIU 2 TEMP [1] | P50T4001V | °F | -23.4 to +304.3 | | | M | ↑ | | 212 | --------- |
| OIU STATUS CTR | P50U4100D | SEC | 00 --- 59 | | | | | | ---------- | --------- |
| ISS BC TIME MM-DD-YY/HH:MM:SS [2] | P50U4110D | [2] | [2] | | | | | | ---------- | --------- |
| ACTIVE DEVICES PD 1 BITS 0-5 [3] | P50X4401E→ P50X4406E | ---------- | OIU, CC1, CC2, SR1, SR2, MP1, MP2, N1-1, N1-2, FG1, FG2 | | | | | | ---------- | --------- |
| ACTIVE DEVICES PD 2 BITS 0-5 [3] | P50X4411E→ P50X4416E | ---------- | OIU, CC1, CC2, SR1, SR2, MP1, MP2, N1-1, N1-2, FG1, FG2 | | | | | | ---------- | --------- |
| ACTIVE DEVICES PD 3 BITS 0-5 [3] | P50X4421E→ P50X4426E | ---------- | OIU, CC1, CC2, SR1, SR2, MP1, MP2, N1-1, N1-2, FG1, FG2 | | | | | | ---------- | --------- |
| ACTIVE DEVICES PD 4 BITS 0-5 [3] | P50X4431E→ P50X4436E | ---------- | OIU, CC1, CC2, SR1, SR2, MP1, MP2, N1-1, N1-2, FG1, FG2 | | | | | | ---------- | --------- |
| ACTIVE DEVICES BUS 1 [4] | P50U4055D | ---------- | 0 --- 7 [4] | | | | | | ---------- | --------- |
| ACTIVE DEVICES BUS 2 [4] | P50U4065D | ---------- | 0 --- 7 [4] | | | | | | ---------- | --------- |
| ACTIVE DEVICES BUS 3 [4] | P50U4075D | ---------- | 0 --- 7 [4] | | | | | | ---------- | --------- |
| ACTIVE DEVICES BUS 4 [4] | P50U4085D | ---------- | 0 --- 7 [4] | | | | | | ---------- | --------- |
| ACTIVE DEVICES LOCK 1 BITS 1, 2 [5] | P50X4440E, P50X4441E | ---------- | NONE = 00, YES = 01, NO = 10, N/A = 11 | | | | | | ---------- | --------- |

PARAMETER CHARACTERISTICS: SM 212 OIU DISPLAY (Cont)

| CRT NAME | MSID | UNITS | DISPLAY RANGE | STATUS INDICATORS | | | | | FDA (Limits) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | H | L | M | ↑ | ↓ | HI | LO |
| ACTIVE DEVICES LOCK 2 BITS 1, 2 [5] | P50X4450E, P50X4451E | ---------- | NONE = 00, YES = 01, NO = 10, N/A = 11 | | | | | | ---------- | --------- |
| ACTIVE DEVICES LOCK 3 BITS 1, 2 [5] | P50X4460E, P50X4461E | ---------- | NONE = 00, YES = 01, NO = 10, N/A = 11 | | | | | | ---------- | --------- |
| ACTIVE DEVICES LOCK 4 BITS 1, 2 [5] | P50X4470E, P50X4471E | ---------- | NONE = 00, YES = 01, NO = 10, N/A = 11 | | | | | | ---------- | --------- |
| PDI DCM 1 (BIT, WORD, FRAME) SYNC | V75X6403D→ V75X6401D | ---------- | '∗' = 1, blank = 0 | | | | | | ---------- | --------- |
| PDI DCM 2 (BIT, WORD, FRAME) SYNC | V75X6407D→ V75X6405D | ---------- | '∗' = 1, blank = 0 | | | | | | ---------- | --------- |
| PDI DCM 3 (BIT, WORD, FRAME) SYNC | V75X6411D→ V75X6409D | ---------- | '∗' = 1, blank = 0 | | | | | | ---------- | --------- |
| PDI DCM 4 (BIT, WORD, FRAME) SYNC | V75X6415D→ V75X6413D | ---------- | '∗' = 1, blank = 0 | | | | | | ---------- | --------- |
| OIU CMD CTR [6] | P50U4130D | ---------- | 000 --- 255 | | | | | | ---------- | --------- |
| OIU PSP I/F [7] | P50X4283E | ---------- | OK, ERR | | | | | | ---------- | --------- |
| FLOAT POINT [8] | P50X4288E | ---------- | OK, ERR | | | | | | ---------- | --------- |
| PSP LAST CMD | V92X1102X, V92X1116X, V92X1129X | ---------- | OK, REJ, INC | | | | | | ---------- | --------- |
| OIU LAST CMD | P50X4281E, P50X4303E | ---------- | OK, REJ | | | | | | ---------- | --------- |
| SSOR PRI FRM SYNC | V74X2050E | ---------- | YES, NO | | | M | | | ---------- | --------- |
| SSOR PRI STATUS | V74X2051E | ---------- | OK, BAD | | | M | | | ---------- | --------- |
| SSOR B/U FRM SYNC | V74X2053E | ---------- | YES, NO | | | M | | | ---------- | --------- |
| SSOR B/U STATUS | V74X2052E | ---------- | OK, BAD | | | M | | | ---------- | --------- |

REMARKS

[1] These parameters will read 140 °F when the OIU associated with that measurement is OFF. Note that the only sure method to determine which OIU is powered up from this display alone (without referring to the OIU SSP power talkback) is to look for the 'OFF' temperature noted above. An up arrow will be displayed when the temperature FDA limit is reached, and an 'M' will be displayed when the associated data is missing.

[2] The ISS BC Time follows the format MM-DD-YY/HH:MM:SS. The OIU Status Counter displays the OIU Time parameter for seconds, reading from 00 to 59 and resetting to 00 again. This display item is intended to indicate OIU health by constantly counting from 00 to 59 and recycling when the OIU telemetry is being processed by the PDI. The ISS BC time comes from whichever device is BC to the OIU on one of its MS 1553B busses. This parameter will read all zeroes at power-up, will show the correct BC time at the time the BC comes up and starts sending telemetry to the OIU, and will remain static at the last good sample when the incoming MS 1553B telemetry from that BC goes away.

[3] PD: OIU (default when no active device assigned, also displayed when in a format which supports an OIU Error Log Dump)
CC1 (CC2) ISS Command and Control MDM #1 or #2
SR1 (SR2) Space to Space Orbiter Radio (SSOR) #1 or #2
MP1 (MP2) ISS Mini Pressurized Logistics Module (MPLM) MDM #1 or #2
N1-1 (N1-2) ISS Node 1 MDM #1 or #2
FG1 (FG2) ISS FGB MDM #1 or #2

[4] BUS: OIU MS 1553B Bus #1 to #7, with #8 reading '0'.
(Note-Current OIU hardware only supports Busses #1 to #4)

[5] NONE if the current OIU Format does not have an AD for this display location
YES if the OIU is RT and in sync with the AD (AD is an ISS BC or SSOR)
YES if the AD is OIU in error log dump format (OIU must be in sync with itself)
NO if the OIU is RT and was in sync with the AD but has lost lock on the AD (ISS BC or SSOR)
N/A if the OIU is BC to the AD, except if the AD is SSOR

Note that if LOCK goes from 'YES' to 'NO', the OIU stops attempting to acquire sync with that AD. To force the OIU to attempt to resync with an AD (ISS BC through MS 1553 bus direct or through the SSOR), the appropriate OIU Format must be reloaded, thus forcing a resync attempt.

[6] The OIU Command Counter will start at "000" at power-up, and will increment by one whenever the OIU receives a valid command from the PSP. The counter reads in decimal, and will count from '000' to '255' and roll over to '000'. All commands, whether from the MCC or the MCDS will cause the counter to increment if received and processed by the OIU.

[7] The PSP I/F (Interface) parameter indicates whether the OIU is receiving the 16 Khz command carrier from either PSP #1 or #2. This parameter will read as follows:
'OK' if the OIU is receiving the PSP command carrier
'ERR' if the OIU is not receiving the PSP command carrier.

[8] The OIU can convert one ISS floating point parameter value per PDI minor frame (maximum of 100 per major frame) into a Shuttle PDI-compatible parameter value. If an ISS floating point value is invalid, or results in an invalid floating point value/operation during the conversion process, the OIU annunciates an error. The associated display parameter will read as follows:

'OK' if no floating point error
'ERR' if an invalid floating point value/operation is detected.

ITEM ENTRY CHARACTERISTICS: SM 212 OIU DISPLAY

Item 1: FORMAT - This is an indexed command item entry, with OIU actual telemetry status. This item allows changing the OIU's PDI format (ITEM 1 + XXX EXEC). The range of allowable format numbers is 001 to 255, in decimal format. The status feedback is the currently loaded OIU PDI format.

Item 2 --- 5: BUS 1 RT (BC, A, B) - This section allows changing the OIU's current MS 1553 B bus processing state (Bus Controller or Remote Terminal) and prime bus channel (A or B) for any of the currently implemented four OIU MS 1553 B busses. The status feedback is the actual OIU state for each bus and parameter, with an asterisk displayed to indicate the currently selected state. For example, if Bus 3 is BC, and using Channel A, there will be an asterisk next to Items 11 and 12. To change Bus 3 to RT, an 'ITEM 10 EXEC' is performed. In the case of the bus channelization ('A' or 'B'), the displayed telemetry indicates which channel is prime for command and telemetry transactions on that bus if the OIU is BC on that bus. If the OIU is BC on a bus, it will try to send a command for an active device associated with that bus using the prime channel. If the OIU receives no MS1553B status message from that active device, it tries again on the prime channel, then it tries on the alternate channel, and if the active device has not responded, it declares it failed and stops trying to send that command to that active device. When the OIU is RT on a bus, it will respond on either channel, depending on which channel received a MS1553B transaction from the BC; therefore, the channel priority has no meaning when the OIU is RT on a bus.

Items 6 --- 9: BUS 2 RT (BC, A, B) - Same as BUS 1 RT (BC, A, B)

Items 10 --- 13: BUS 3 RT (BC, A, B) - Same as BUS 1 RT (BC, A, B)

Items 14 --- 17: BUS 4 RT (BC, A, B) - Same as BUS 1 RT (BC, A, B)

Item 18: This item entry has command entry feedback only, no actual OIU feedback. This item entry is an indexed command which allows performing the following internal OIU function mapping:

Item 18 + 1: Change FGB MDM Active Device to FGB-2 MDM Physical Device
Item 18 + 2: Change FGB MDM Active Device to FGB-1 MDM Physical Device
Item 18 + 3: Change Node 1 MDM Active Device to N1-2 MDM Physical Device
Item 18 + 4: Change Node 1 MDM Active Device to N1-1 MDM Physical Device
Item 18 + 5: Move FGB -2 MDM Physical Device to OIU Bus # 4 (UB ORB N1-2)
Item 18 + 6: Move FGB -2 MDM Physical Device to OIU Bus # 3 (UB ORB N1-1)
Item 18 + 7: Move FGB -1 MDM Physical Device to OIU Bus # 4 (UB ORB N1-2)
Item 18 + 8: Move FGB -1 MDM Physical Device to OIU Bus # 3 (UB ORB N1-1)